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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,901	11/12/2003	Steven James Frisken	086815-000000US	7745
20350	7590	09/15/2005	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP			LEE, JOHN D	
TWO EMBARCADERO CENTER			ART UNIT	
EIGHTH FLOOR			PAPER NUMBER	
SAN FRANCISCO, CA 94111-3834			2874	

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/706,901

Applicant(s)

FRISKEN, STEVEN JAMES

Examiner

John D. Lee

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 21 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 10, 14-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 7, 9, 11, 12 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0604, 0205.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

The ten (10) sheets of drawing filed on May 24, 2004, are acceptable.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims 1, 6, 11, 13, 14, 18, and 21 are objected to because of the following minor informalities: In claim 1, line 8, "wavelengths bands" should be "wavelength bands"; in claim 1, line 8, "and" should be inserted after the semi-colon; and in claim 6, line 2, "of" should be inserted after "series". Claim 11 does not end in a period as required. In claim 13, line 6, "element" should be inserted after "power"; in claim 13, line 7, "wavelengths bands" should be "wavelength bands"; in claim 13, line 13, "separation element" should be "dispersion element"; in claim 14, line 9, "and" should be inserted after the semi-colon; in claim 18, line 2, "of" should be inserted after "series"; in claim 21, line 9, "wavelengths bands" should be "wavelength bands"; and in claim 21, line 9, "and" should be inserted after the semi-colon. Appropriate correction is required.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8, 10, 14-18, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,766,081 to Weaver et al. Weaver et al discloses a wavelength selective manipulation device comprising fiber optic input ports for inputting optical signals including a plurality of wavelength channels; a wavelength dispersion

element **25** (e.g. diffraction grating) for angularly dispersing the wavelength channels into angularly dispersed wavelength signals; an optical power element **20** for focusing in the dimension of the angular dispersion the angularly dispersed wavelength signals into a series of spatially separated wavelength bands; and fiber optic output ports for receiving the spatially separated wavelength bands. Weaver et al does not specifically disclose in any of the embodiments therein a spatial manipulation element for receiving and selectively spatially manipulating the characteristics of the spatially separated wavelength bands. The reference does, however, disclose that liquid crystal modulating arrays may receive the spatially separated wavelength bands (column 9, lines 41-46). Since liquid crystal modulating arrays are known in the art as elements which selectively spatially manipulate characteristics of light input thereinto, the use of same for receiving the spatially separated wavelength bands in Weaver et al, and consequently spatially manipulating the characteristics of the spatially separated wavelength bands, would have been obvious to an ordinarily skilled artisan. Further, after such manipulation, the combining of the spatially manipulated wavelength bands by a wavelength combining element to produce an output signal would have been obvious, especially since (in optical communications arrangements) the individually manipulated bands would need to be multiplexed for further transmission along the communications line. Although Weaver et al does not specifically mention that optical power element **20** is a cylindrical lens, the reference does disclose that this element flattens the focal field (column 8, lines 55-56). The person of ordinary skill would thus have found it obvious to employ a cylindrical lens for this purpose. Liquid crystal modulating arrays are known to be a

series of liquid crystal cells; such cells would obviously be designed to physically match the shape of the wavelength bands input thereinto. Figure 3 of Weaver et al shows an embodiment wherein the optical power element also includes a spherical mirror device.

Claims 13 and 21 are allowable over the prior art of record. Weaver et al, the closest prior art of record, does not disclose or reasonably suggest subsequently focusing, after spatial manipulation by liquid crystal modulating arrays, the spatially manipulated wavelength bands by optical power element **20** and then combining the spatially manipulated wavelength bands by the wavelength dispersion element **25** for output in a spatially selective manner. Weaver et al also does not disclose or reasonably suggest a polarization alignment element for aligning the polarization state of the optical signals therein.

Claims 7, 9, 11, 12, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Weaver et al, the closest prior art of record, does not disclose or reasonably suggest the liquid crystal cell structure/modal output requirement set forth in applicant's claims 7 and 19. Weaver et al also does not disclose or reasonably suggest using the diffraction grating substantially at the Littrow condition. Weaver et al further does not disclose or reasonably suggest the output state requirements set forth in applicant's claims 11 and 12.

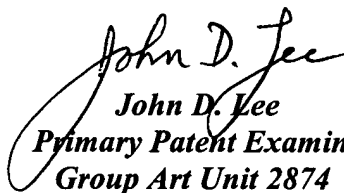
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,441,959 to Yang et al and U.S. Patent 6,556,320 to

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Cao disclose other wavelength selective manipulation devices utilizing diffraction gratings and optical focussing elements.

All of the prior art documents submitted in the Information Disclosure Statements filed on June 4, 2004, and February 17, 2005, have been considered and made of record. Note the attached initialed copy of forms PTO-1449.

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.

  
**John D. Lee**  
**Primary Patent Examiner**  
**Group Art Unit 2874**